M Henton

EA Engineering, Science, and Technology

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30 October 2002

Mr. Michael Resh
Manager of Environmental Remediation
BOC Gases
100 Mountain Avenue
Murray Hill, New Jersey 07974

RE: Third Quarter 2002 Monitoring Event Letter Report, Site No. 932001,
Airco Properties Inc., Witmer Road Landfill, Niagara Falls, New York
EA Project No. 12040.69

Dear Mr. Resh:

EA Engineering, P.C. and its affiliate EA Engineering, Science, and Technology are pleased to provide the Third Quarter 2002 Monitoring Event Letter Report. During December 2000, the post-closure monitoring and facility maintenance program was initiated at the Witmer Road Landfill located in Niagara Falls, New York. Post-closure monitoring and facility maintenance is required by New York State Solid Waste Management Facilities Regulations (6 NYCRR Part 360-2.15[k][4]) and stipulated in Order on Consent No. B9-0470-94-12. The purpose of this monitoring event letter report is to summarize the analytical results of the third quarter 2002 ground-water monitoring event that was completed at this site in September 2002.

OBJECTIVES

In accordance with the Revised Final Post-Closure Monitoring and Facility Maintenance Plan (EA 2001)[1], environmental monitoring points will be maintained and sampled during the post-closure monitoring period. This includes collection of ground-water, surface water, and leachate samples. The Revised Final Post-Closure Monitoring and Facility Maintenance Plan documents sampling locations and sampling parameters and methods, in addition to other required maintenance activities, such as landfill cap inspections. It is anticipated that within 5 years of the start of post-closure monitoring, this plan will be re-evaluated based on the data collected at the site so that the monitoring plan will be focused to address site-specific issues that may be identified.

The objectives of the Post-Closure Monitoring and Facility Maintenance Program are to:

- Collect representative ground-water and surface water samples in order to monitor any potential leachate migration from the landfill, and to document the effectiveness of the landfill capping system.

1. EA Engineering, Science, and Technology. 2001a. Interim Remedial Measure Report Documenting Closure of the Witmer Road Landfill, Niagara Falls, New York. Appendix A – Revised Final Post-Closure Monitoring and Facility Maintenance Plan. January.

- Evaluate these data to determine whether any potential impacts may be occurring that could affect human health or the environment

- Provide this information to the BOC Group and the New York State Department of Environmental Conservation (NYSDEC).

As noted in the Revised Final Post-Closure Monitoring and Facility Maintenance Plan (EA 2001a), the results of the quarterly sampling events will be summarized in a letter report detailing the findings of the environmental sampling. Monitoring event letter reports will be limited to documenting the results of each sampling round. This letter report summarizes the findings of the eighth post-closure monitoring event completed at this site.

BACKGROUND

The Witmer Road Landfill is part of the Vanadium Corporation of America site that is located in the Town of Niagara Falls, New York (Figure 1). The Vanadium site is approximately 150 acres. This quarterly sampling event focused on the 25-acre Airco parcel operated by the BOC Group. The site contains waste material from the operation of onsite and nearby production facilities.

An Immediate Investigative Work Assignment was conducted by NYSDEC for a portion of the 150-acre parcel in August 1997. Approximately 70 acres from the Niagara Mohawk Power Corporation and New York Power Authority parcel were investigated. During the investigation, NYSDEC determined that the site had been used by Vanadium Corporation of America (the owners of the site from 1924 to 1964) to dispose of wood, brick, ash, lime slag, ferrochromium silicon slag, and ferrochromium silicon dust. According to the Immediate Investigative Work Assignment, much of the surface material consisted of fill, including fly ash, dust, slag, and cinder materials.

Analysis of site ground water during the Immediate Investigative Work Assignment indicated that surface water and ground-water standards were exceeded for hexavalent chromium and pH. Based on the Immediate Investigative Work Assignment and other investigations, the facility has been listed as a Class 2 Hazardous Waste Site in the New York State Registry of Inactive Hazardous Waste Sites (Site No. 932001). A Class 2 listing indicates a significant threat to public health and the environment, and requires remedial action.

Remedial measures were completed at the Witmer Road Landfill during 2000, which included completion of an impermeable cap and leachate relief system. A complete description of the history of the site, and the construction details of the landfill capping system, can be found in the Interim Remedial Measure Report (EA 2001b)[2].

2. EA Engineering, Science, and Technology. 2001b. Interim Remedial Measure Report Documenting Closure of the Witmer Road Landfill, Niagara Falls, New York. January.

MONITORING EVENT FIELD ACTIVITIES

Monitoring Well Gauging

The site monitoring wells (MW-1B through MW-8B) were gauged prior to sampling on 5 September 2002. The depth to water ranged from 6.25 ft at MW-6B to 16.64 ft at MW-2B. Gauging data are summarized in the table below:

Monitoring Well	Depth to Water (ft btoc)	Well Elevation (ft AMSL)	Water Elevation (ft AMSL)
MW1B	15.55	617.77	602.22
MW2B	16.64	615.88	599.24
MW3B	12.34	611.22	598.88
MW4B	14.63	606.68	592.05
MW5B	12.92	605.48	592.56
MW6B	6.25	603.47	597.22
MW7B	11.81	609.48	597.67
MW8B	10.04	611.62	601.58

NOTE: btoc = Below top of casing.
AMSL = Above mean sea level.

An interpretation of the water table surface is illustrated on Figure 2.

Ground-Water Sampling Procedures

Monitoring wells were sampled on 5 September 2002. Seven ground-water samples were collected from the site monitoring wells. Monitoring well MW-4B was not sampled due to lack of ground-water recharge. Monitoring wells MW-2B, MW-3B, MW-5B, MW-7B, and MW-8B were purged using dedicated bailers due to low recharge and well volume. These wells were bailed dry at least once and allowed to recharge prior to sample collection. Monitoring wells MW-1B and MW-6B had adequate recharge rates; consequently, 4 well volumes were removed and water quality readings allowed to stabilize prior to sample collection. One leachate sample was also collected. Samples were submitted to Environmental Laboratory Services of North Syracuse, New York for analysis of phenolics by U.S. Environmental Protection Agency (EPA) Method 420.2, sulfate by EPA Method 375.3, ammonia (expressed as nitrogen) by EPA Method 350.2, and Target Analyte List metals by EPA Series 6010/6020, including hexavalent chromium.

Ground-water sampling results were compared to NYSDEC Ambient Water Quality Standards (AWQS) (NYSDEC 1999)[3] and guidance values for Class GA waters. Class GA ground water is used as a source of drinking water. Leachate samples were compared to NYSDEC AWQS for Class D surface waters. Class D waters are used for fishing but are not conducive to fish propagation. If no Class D standards were applicable for a particular compound, analytical results were compared to the more stringent Class C standards. Class C waters are suitable for fishing and fish propagation. Analytical results are summarized on the table provided in Attachment A. Copies of the field notebook, including the

3. New York State Department of Environmental Conservation. 1999. Water Quality Regulations – Surface Water and Groundwater Classifications and Standards New York State Codes, Rules and Regulations Title 6, Chapter X Parts 700-706.

results for well gauging, purging, and sampling, are provided in Attachment B. Laboratory chain-of-custody records are provided in Attachment C. Laboratory Form I analytical results are included in Attachment D.

No surface water samples were collected due to lack of available surface water sources.

ANALYTICAL RESULTS

Based on the analytical results collected during the Fourth Quarter 2000 and First Quarter 2001, NYSDEC approved a reduction in the sampling requirements. As per a letter to NYSDEC dated 5 June 2000, samples were analyzed for water quality parameters (ammonia, phenolics, and sulfate) and total (unfiltered) metals.

Summary tables listing analytical results compared to applicable NYSDEC AWQS are included in Attachment A, and a tag map is provided as Figure 3. Notable results of chemical analyses are as follows.

Metals

Unfiltered metals samples were collected from 7 of the site monitoring wells. Notable results included the following:

- Cadmium, chromium, hexavalent chromium, iron, lead, magnesium, manganese, selenium, and sodium were detected in one or more of the ground-water samples at concentrations in excess of NYSDEC AWQS.

- Hexavalent chromium was detected in excess of the NYSDEC AWQS in MW-2B, MW-7B, MW-8B, and the leachate sample. Selenium was also detected in excess of the NYSDEC AWQS in MW-8B and the leachate sample.

Water Quality Parameters

Water quality parameters, including pH, temperature, conductivity, dissolved oxygen, turbidity, and salinity, were collected in the field. In addition, water quality parameters, including ammonia (expressed as N), phenolics, and sulfate, were also analyzed by the laboratory. Notable results included the following:

- Sulfate was detected in excess of NYSDEC AWQS in samples collected from monitoring well MW-8B

- Phenolics were detected in excess of NYSDEC AWQS in samples collected from monitoring wells MW-1B, MW-2B, and MW-7B

- pH measurements exceeded NYSDEC AWQS in monitoring wells MW-2B, MW-3B, as well as the leachate samples (Attachment B).

LANDFILL INSPECTION

During the June 2002 landfill inspection, EA noted that a section of the perimeter fence along the eastern boundary of the landfill had been cut. Fence repairs were completed by September 2002. In addition to the repairs, the vegetation covering the landfill was noted at 2-3 ft high. Mowing was completed during July 2002.

A landfill cap inspection was conducted on 5 September 2002. The Landfill Cap Inspection Checklist is provided as Attachment E. No deterioration, damage, or erosion to the landfill cap, drainage swales, or access roads was noted during the engineering inspection. Based on the lack of erosion, and with the approval of the NYSDEC project manager, the silt fence will be removed during October 2002.

If you have any questions regarding the results of this Third Quarter 2002 Monitoring Event, please do not hesitate to contact Charles McLeod at (845) 565-8100.

Sincerely,

EA ENGINEERING, P.C.

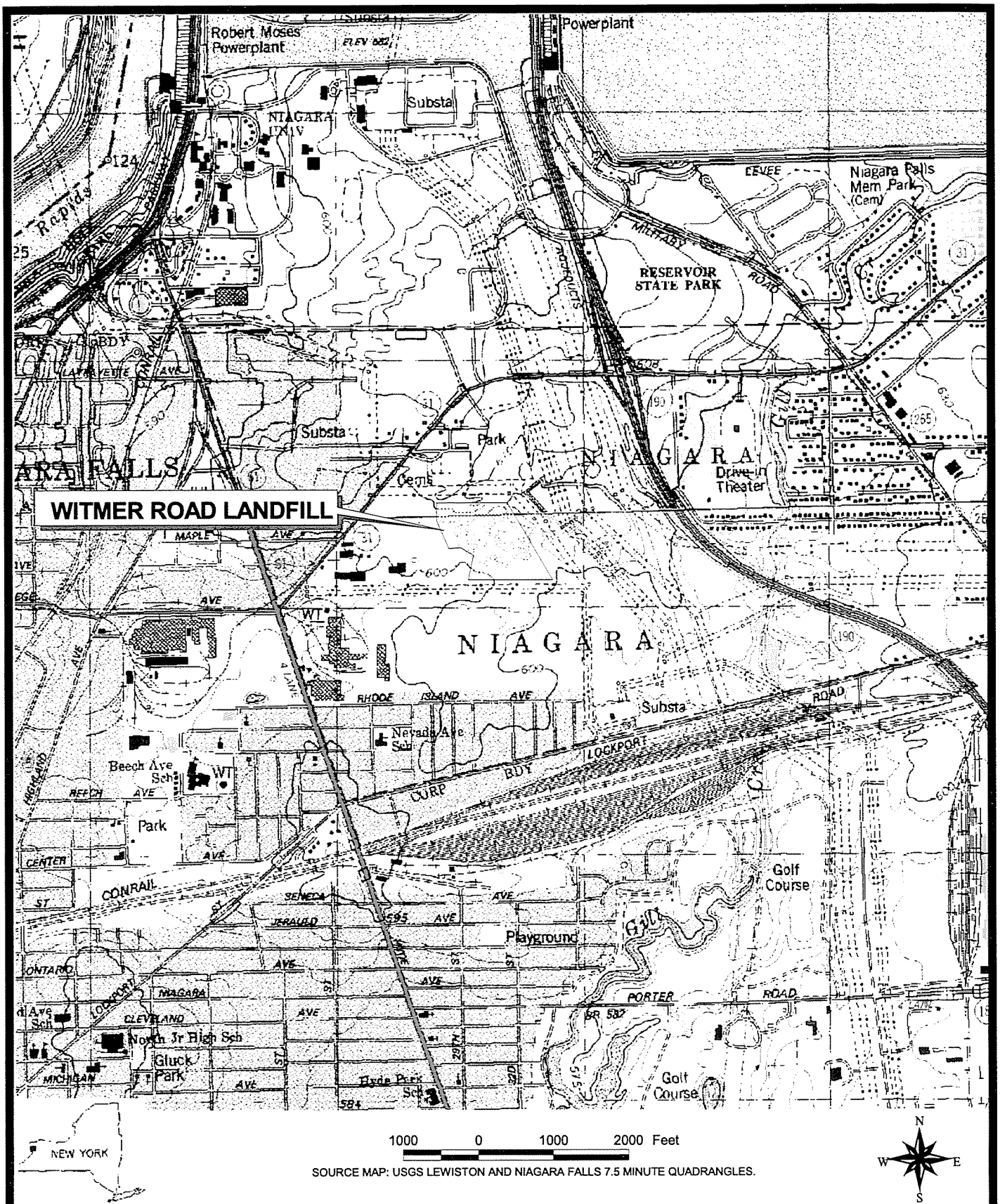
Charles E. McLeod, Jr., P.E.
Vice President

EA ENGINEERING, SCIENCE,
AND TECHNOLOGY

Scott Graham
Project Geologist

CEM/rsc
Attachments

cc: M. Hinton (NYSDEC)
D. Hettrick (NYSDOH)
Town of Niagara Falls (Town Clerk)



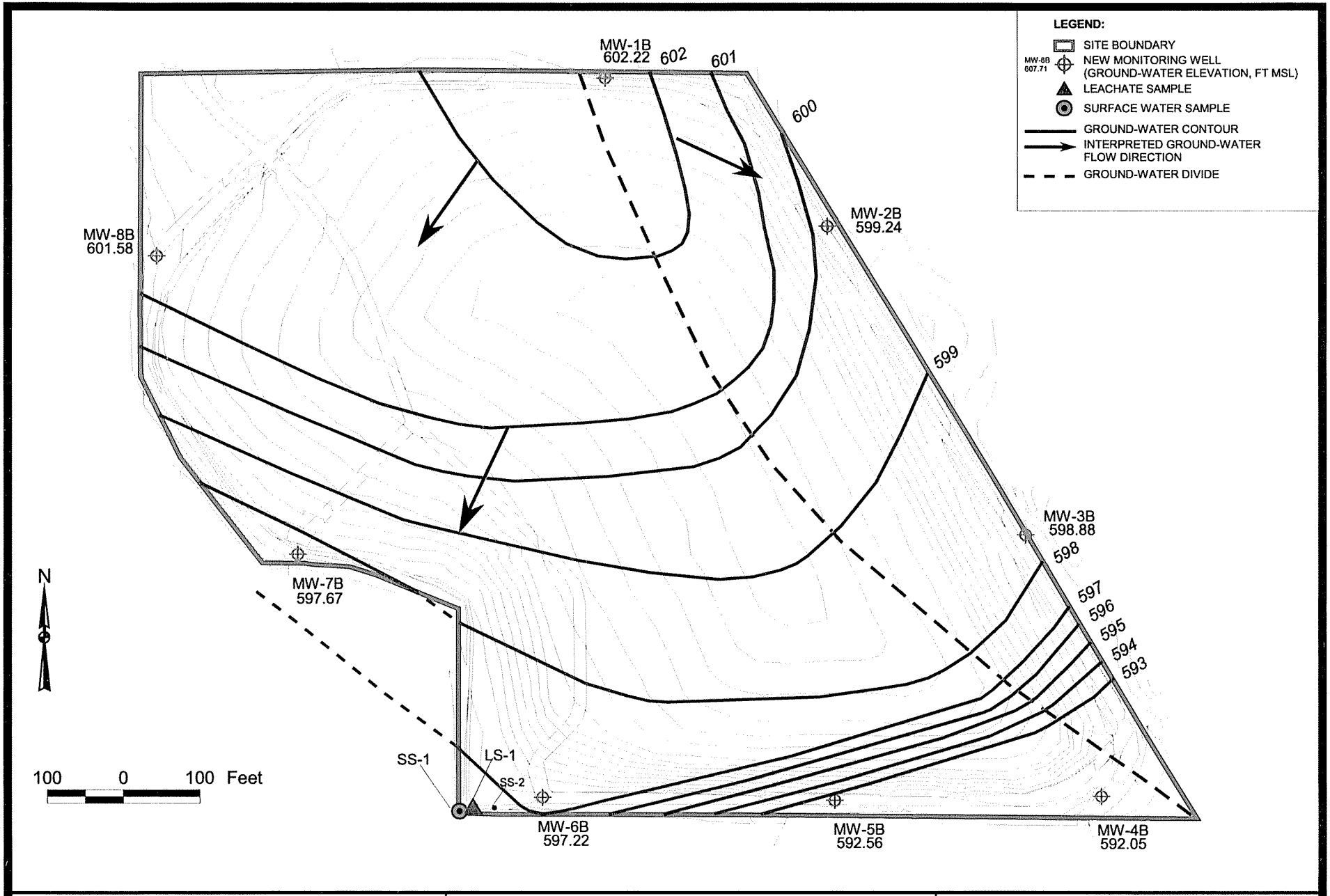
SOURCE MAP: USGS LEWISTON AND NIAGARA FALLS 7.5 MINUTE QUADRANGLES.

EA ENGINEERING, P.C. AND ITS AFFILIATE
EA ENGINEERING, SCIENCE, AND TECHNOLOGY

WITMER ROAD LANDFILL
NIAGARA FALLS, NEW YORK

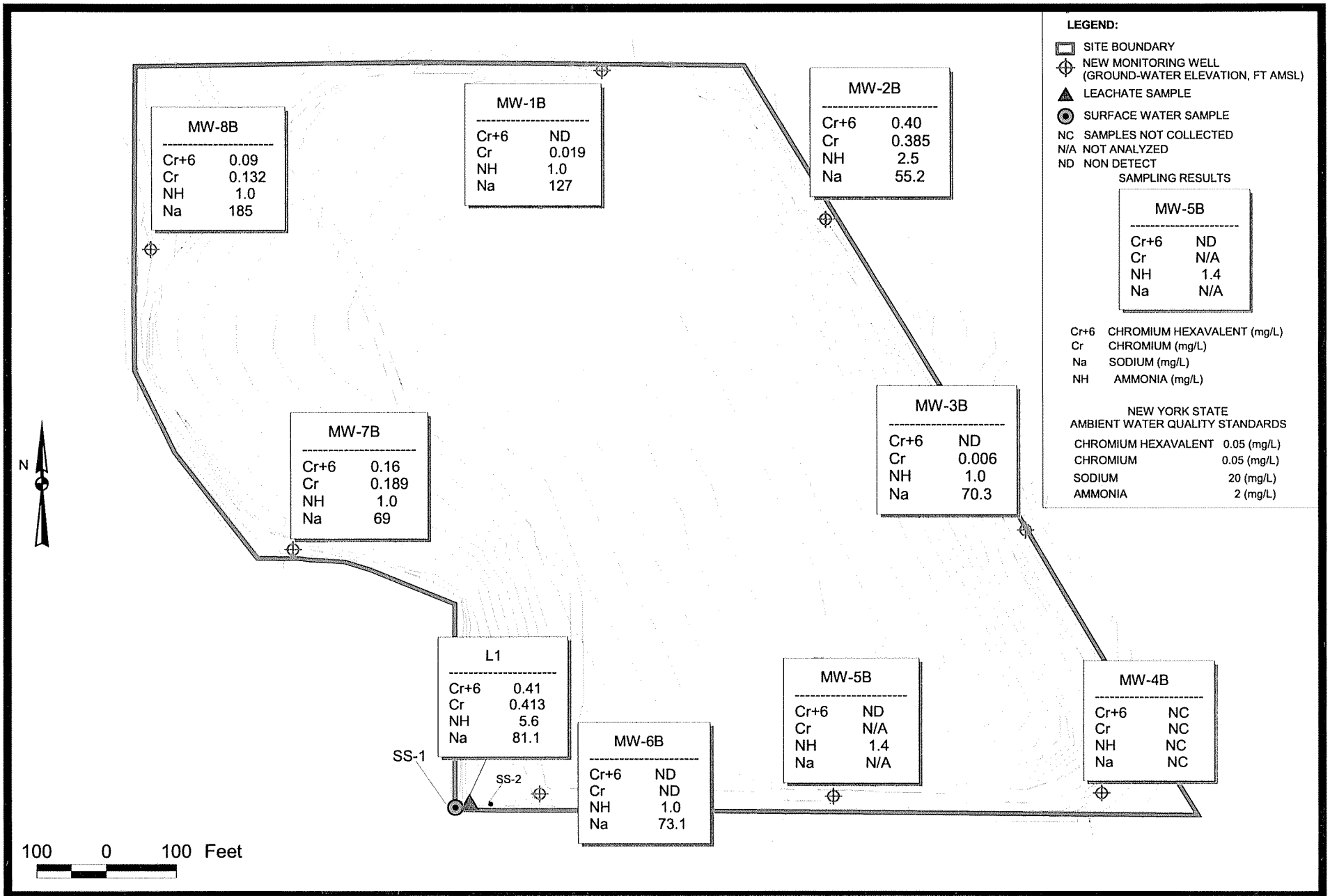
FIGURE 1
SITE LOCATION MAP

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
CEM	BT	BT	CEM	AS SHOWN	21 MARCH 2002	12040.69	I:\BOC-NIAGARA\FINAL.APR



EA ENGINEERING, SCIENCE, AND TECHNOLOGY	WITMER ROAD LANDFILL NIAGARA FALLS, NEW YORK	FIGURE 2 INTERPRETED GROUND-WATER CONTOUR MAP SEPTEMBER 2002

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
CEM	BT/RSC	BT/BH	SLG	AS SHOWN	9 OCTOBER 2002	12040.69	I:\BOC-NIAGARA-GIS\ FINAL02.APR



EA ENGINEERING, SCIENCE, AND TECHNOLOGY

WITMER ROAD LANDFILL
NIAGARA FALLS, NEW YORK

FIGURE 3
SAMPLING RESULTS
5 SEPTEMBER 2002

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
CEM	BT/RSC	BT/RSC	SLG	AS SHOWN	9 OCTOBER 2002	12040.69	I:\BOC-NIAGARA-GIS\ FINAL02.APR

Attachment A

Summary of Analytical Results of Ground-Water and Leachate Samples

ATTACHMENT A SUMMARY OF ANALYTICAL RESULTS OF GROUND-WATER, SURFACE WATER, AND LEACHATE SAMPLES COLLECTED IN SEPTEMBER 2002, WITMER ROAD LANDFILL, NIAGARA FALLS, NEW YORK

Ground Water

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

Compound/Element	AWQS	MW-1B	MW-2B	MW-3B	MW-5B	MW-6B	MW-6B (Dup)	MW-7B	MW-8B
Cadmium	0.005	(<0.005U)	(<0.005U)	(<0.005U)		(<0.005U)	(<0.005U)	(<0.005U)	**0.007**
Chromium	0.05	0.019	**0.385**	0.006		(<0.005U)	0.007	**0.189**	**0.132**
Chromium, Hexavalent	0.05	(<0.01U)	**0.4**	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	**0.16**	**0.09**
Iron	0.3	**2.43**	0.213	**2.87**		0.268	**0.466**	**22.9**	**39**
Lead	0.025	0.008	(<0.005U)	0.005		(<0.005U)	(<0.005U)	0.01	**0.073**
Magnesium	35*	**68.8**	(<1U)	9.5		**77.1**	**81.4**	21.7	**108**
Manganese	0.3	**0.844**	0.007	0.056		0.128	0.128	**0.488**	**1.36**
Selenium	0.01	(<0.005U)	0.007	(<0.005U)		(<0.005U)	(<0.005U)	(<0.005U)	**0.064**
Silica	---	18.8	1.7	16.6		11.6	12.6	42.1	52.8
Sodium	20	**127**	**55.2**	**70.3**		**73.1**	**70.6**	**69**	**185**
Zinc	2*	0.237	(<0.005U)	0.041		(<0.005U)	(<0.005U)	0.066	0.59

Water Quality Parameters (mg/L)

Total (Unfiltered)

Compound/Element	AWQS	MW-1B	MW-2B	MW-3B	MW-5B	MW-6B	MW-6B (Dup)	MW-7B	MW-8B
Ammonia (expressed as N)	2	(<1U)	**2.5**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Phenolics	0.001	**0.009**	**0.01**	(<0.002U)		0 (<0.002U)	(<0.002U)	**0.003**	(<0.002U)
Sulfate	250	206	14.3	44.9		213	211	33.5	**398**

Ground Water Relief Pipe

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

		L1
Compound/Element	**AWQS**	
Cadmium	---	(<0.005U)
Chromium	---	0.413
Chromium, Hexavalent	0.016	**0.41**
Iron	0.3	(<0.025U)
Lead	---	(<0.005U)
Magnesium	---	(<1U)
Manganese	---	(<0.005U)
Selenium	0.0046	**0.018**
Silica	---	0.346
Sodium	---	81.1
Zinc	---	(<0.005U)

Water Quality Parameters (mg/L)

Total (Unfiltered)

		L1
Compound/Element	**AWQS**	
Ammonia (expressed as N)	---	5.6
Phenolics	---	0.019
Sulfate	---	9.09

QA/QC

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

Compound/Element	AWQS	Rinse Blank	Source Water Blank
Cadmium	---	(<0.005U)	(<0.005U)
Chromium	---	(<0.005U)	(<0.005U)
Chromium, Hexavalent	---	(<0.01U)	(<0.01U)
Iron	---	(<0.025U)	(<0.025U)
Lead	---	(<0.005U)	(<0.005U)
Magnesium	---	(<1U)	(<1U)
Manganese	---	(<0.005U)	(<0.005U)
Selenium	---	(<0.005U)	(<0.005U)
Silica	---	(<0.107U)	(<0.107U)
Sodium	---	(<1U)	(<1U)
Zinc	---	(<0.005U)	(<0.005U)

Water Quality Parameters (mg/L)

Compound/Element	AWQS	Rinse Blank	Source Water Blank
Ammonia (expressed as N)	---	(<1U)	(<1U)
Phenolics	---	(<0.002U)	(<0.002U)
Sulfate	---	(<2U)	(<2U)

TABLE NOTES

AWQS	=	New York State Ambient Water Quality Standards and Guidance Values from Water Quality Regulations, Title 6, Chapter X Parts 700-706 August 1999.
*	=	Indicates guidance value.
---	=	Indicates no standard or guidance value exists.
U	=	Not detected. Sample quantitation limits shown as (<__U).

Only those analytes detected in at least one of the samples is shown on this table.
Results shaded and in boldface indicate concentrations in excess of New York State Ambient Water Quality Standards or Guidance Values.

Analytical Methods for Water Quality Parameters

Ammonia (expressed as Nitrogen)	=	EPA 350.2
Phenolics	=	EPA 420.2
Sulfate	=	EPA 375.3

Attachment B

Ground-Water Sampling Purge Forms

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW1B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date: 9/5/02	Purge Time: 1035
Purge Method: 2" SUB/LOW FLOW	Field Technician: R.CASEY

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 15.55	E. Well Volume (gal) C*D):	Pump Type: GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
1042	15.55	0	0.25	9.57	0.1	16.21	1.55	15.53	229
1046	16.65	1	0.25	8.8	0.1	14.69	1.53	11.65	285
1050	16.63	2	0.25	8.24	0.1	14.69	1.58	10.01	210
1054	16.63	3	0.25	8	0.1	15.38	1.56	9.57	185
1058	16.63	4	0.25	7.83	0.1	15.62	1.57	9.33	114
1102	16.63	5	0.25	7.72	0.1	15.73	1.6	8.99	63.4
1106	16.64	6	0.25	7.67	0.1	15.9	1.61	8.91	47.3
1110	16.64	7	0.25	7.67	0.1	15.92	1.62	8.9	44.1

Total Quantity of Water Removed (gal): 1.8 gal
Samplers: R.CASEY
Sampling Date: 5-Sep-02
Sampling Time: 1115
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW2B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	1005
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume		
A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 16.64	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal (%)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	16.64			12.85	0.2	14.69	4.19	13.44	8.6
ENDING		~3		12.87	0.2	13.29	4.53	12.55	32.9

Total Quantity of Water Removed (gal): ~3 gal.
Samplers: R.CASEY
Sampling Date: 5-Sep-02
Sampling Time: 1400
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS: NOT ENOUGH WATER TO PUMP. WELL BAILED DRY ON 05 SEP 02 AND SAMPLED ON 05 SEP 02.

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EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW3B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	945
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume

A. Well Depth (ft): 12.34	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft):	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	12.34			9.39	0	16.34	0.441	12.97	17.4
ENDING		~3		9.75	0	13.76	0.503	11.98	53

Total Quantity of Water Removed (gal): ~3 gal
Samplers: R.CASEY
Sampling Date: 5-Sep-02
Sampling Time: 1545
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS: NOT ENOUGH WATER TO PUMP. WELL BAILED DRY ON 05 SEP 02 AND SAMPLED ON 05 SEP 02.

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW4B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	940
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 14.63	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	14.63			8.05	0.1	14.37	1.13	10.6	538

Total Quantity of Water Removed (gal): ~0.25L
Samplers: R.CASEY
Sampling Date: NA
Sampling Time: NA
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS: NOT ENOUGH WATER TO SAMPLE. WELL DRY.

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EA Engineering, Science, and Technology

GROUND-WATER SAMPLING
PURGE FORM

Well I.D.: WRL-MW5B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	930
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 12.92	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	12.92			7.71	0.1	16.19	1.29	13.11	19.7
ENDING		~0.5		7.8	0.1	15.87	1.3	12.91	>999

Total Quantity of Water Removed (gal):	~0.5 gal	Sampling Time:	1535
Samplers:	R.CASEY	Split Sample With:	
Sampling Date:	5-Sep-02	Sample Type:	GRAB

COMMENTS AND OBSERVATIONS: CHROMIUM AND PHENOLICS/NITRATES ONLY SAMPLES OBTAINED. NOT ENOUGH WATER FOR A FULL SAMPLE SET.

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW6B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	1150
Purge Method:	2" SUB/LOW FLOW	Field Technician:	R.CASEY

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 6.25	E. Well Volume (gal) C*D):	Pump Type: GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
1155	6.25	0	0.25	8.05	0.1	18.13	1.22	14.46	50.9
1159	8.52	1	0.25	7.68	0.1	16.7	1.22	10.39	31.9
1203	8.99	2	0.25	7.69	0.1	17.16	1.22	9.28	24.7
1207	8.99	3	0.25	7.73	0.1	18.06	1.23	9.96	21.1
1211	9.02	4	0.25	7.72	0.1	18.12	1.23	9.55	12.7
1215	9.03	5	0.25	7.76	0.1	18.29	1.23	9.49	12.5

Total Quantity of Water Removed (gal):	~1.25	Sampling Time:	1220
Samplers:	R.CASEY	Split Sample With:	
Sampling Date:	5-Sep-02	Sample Type:	GRAB

COMMENTS AND OBSERVATIONS: WRL-DUP-0602 ALSO COLLECTED FROM 6B.

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW7B	EA Personnel: R.CASEY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 6/11/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	6/12/02	Purge Time:	915
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume		
A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 11.81	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	11.81			7.83	0	17.13	0.402	12.35	102
ENDING		~2		8.44	0	15.59	0.338	12.45	190

Total Quantity of Water Removed (gal):	~2 gal	Sampling Time:	1520
Samplers:	R.CASEY	Split Sample With:	
Sampling Date:	5-Sep-02	Sample Type:	GRAB

COMMENTS AND OBSERVATIONS: NOT ENOUGH WATER TO PUMP. WELL BAILED DRY ON 05 SEP 02 AND SAMPLED ON 05 SEP 02

EA Engineering, Science, and Technology

GROUND-WATER SAMPLING PURGE FORM

Well I.D.: WRL-MW8B	EA Personnel: R.CASY	Client: BOC GASES
Location: NIAGARA FALLS	Well Condition: LOCKED	Weather: PARTLY CLOUDY, 70s
Sounding Method: WLI	Gauge Date: 9/5/02	Measurement Ref: TOC
Stick Up/Down (ft): UP	Gauge Time:	Well Diameter (in): 4"

Purge Date:	9/5/02	Purge Time:	845
Purge Method:	HAND BAIL	Field Technician:	R.CASEY

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
B. Depth to Water (ft): 10.04	E. Well Volume (gal) C*D):	Pump Type:
C. Liquid Depth (ft) (A-B):	F. Five Well Volumes (gal) (E3):	Pump Designation:

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (gal)	Rate (gpm)	pH (pH units)	Sal %	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	10.04			6.45	0.1	15.79	1.76	10.91	242
ENDING		~2.5		7.12	0.1	13.64	1.53	3.42	>999

Total Quantity of Water Removed (gal): ~2.5 gal
Samplers: R.CASEY
Sampling Date: 5-Sep-02
Sampling Time: 1505
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS: NOT ENOUGH WATER TO PUMP. WELL BAILED DRY ON 05 SEP 02 AND SAMPLED ON 05 SEP 02

C:\Forms\Lowflow.xls

Attachment C

Chain-of-Custody Records

Environmental LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park North Syracuse, NY 13212
(315) 458-8033 FAX (315) 458-0249 (800) 843-8265

CHAIN OF CUSTODY RECORD
and Authorization for Analysis

Name	Robert S. Lacey	Title	Scientist
Company	EA Engineering	Dept.	2152
Address	7037 Ley Road	Job/PO No.	12040.69.0002
City, State, Zip	East Syracuse, NY 13057		

The following services may result in additional charges: ☐ Express Service

☐ Telephone Results Telephone No. 431-4610 ☐ Advance Agreement Required

☐ Fax Results Fax No. 431-4280 ☐ 1 Week ☐ 48 Hour

To be completed by Sampler. Please remember to record this information on the container label.

ELS Number	*Date	*Time	*Comp.	*Grab	*Matrix	*Sampling Location	Number of Containers	Container Type/Preservative: Plastic/No Preservatives	Plastic/HNO_3	Plastic/H_2SO_4	Plastic/NaOH+Ascorbic Acid	Plastic/NaOH+Zinc Acetate	Glass/No Preservative	Glass/Sodium Thiosulfate	Amber Glass/No Pres.	Amber Glass/H_2SO_4	Other: (specify)	Analyses Required, Remarks, and/or Special Instructions
32867 2 4	9/5/2002	1115		X	W	WRL-MW1B-0902	1	5L										Cr+6
32868 13 8	9/5/2002	1220		X	W	WRL-MW6B-0902	1	5L										Cr+6
32869 14 12	9/5/2002	—		X	W	WRL-DUP-0902	1	5L										Cr+6
32870 15 16	9/5/2002	1300		X	W	WRL-LI-0902	1	5L										Cr+6
32871 16 20	9/5/2002	1240		X	W	WRL-SS-0902	1	5L										Cr+6
32872 17 24	9/5/2002	1245		X	W	WRL-RB-0902	1	5L										Cr+6
32873 18 28	9/5/02	1505		X	W	WRL-MW8B-0902	1	5L										Cr+6
32874 19 32	9/5/02	1520		X	W	WRL-MW7B-0902	1	5L										Cr+6
32875 20 36	9/5/02	1535		X	W	WRL-MW5B-0902	1	5L										Cr+6
32876 21 40	9/5/02	1545		X	W	WRL-MW3B-0902	1	5L										Cr+6
32877 22 44	9/5/02	1400		X	W	WRL-MW2B-0902	1	5L										Cr+6

Containers Dispensed by: K Hawko	Date 9/4/02	Time 1200	Container(s) Received by:	Date	Time
Relinquished by: Robert S Lacey	Date 9/5/02	Time 1730	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Your signature authorizes ELS to analyze the sample(s) as indicated. Relinquished by:	Date	Time	Received at Lab by: K. Hawko	Date 9/6/02	Time 920
Sampler Signature:					

White - LABORATORY Canary - ACCOMPANIES RESULTS Pink - CLIENT

Please return completed form and all sample containers to Environmental Laboratory Services.

4°C

Environmental LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park North Syracuse, NY 13212
(315) 458-8033 FAX (315) 458-0249 (800) 843-8265

CHAIN OF CUSTODY RECORD and Authorization for Analysis

Name Robert S. Carey | Title Scientist
Company EA Engineering | Dept. 2157
Address 7037 Ley Road | Job/PO No. 12876.69.0002
City, State, Zip East Syracuse, NY 13057

The following services may result in additional charges: Express Service
☐ Telephone Results Telephone No. 431-4610 Advance Agreement Required
☐ Fax Results Fax No. 431-4280 ☐ 1 Week ☐ 48 Hour

ELS Number	To be completed by Sampler. Please remember to record this information on the container label. *Date	*Time	*Comp.	*Grab	*Matrix	*Sampling Location	Number of Containers	Container Type/Preservative: Plastic/No Preservatives	Plastic/HNO_3	Plastic/H_2SO_4	Plastic/NaOH+Ascorbic Acid	Plastic/NaOH+Zinc Acetate	Glass/No Preservative	Glass/Sodium Thiosulfate	Amber Glass/No Pres.	Amber Glass/H_2SO_4	Other: (specify)	Analyses Required, Remarks, and/or Special Instructions
32866831	9/5/02	1115		X	W	WRL-MW1B-0902	1									✓		Phenolics, NH_3-N
-	↓	↓		↓	↓	↓	1			HC								Ammonia-N
32866832							1	✓										Sulfate
32866833							1		✓									Total Cd, Cr, Fe, Pb, Mg, Mn, Se, Na, Tl, Zn
32866834	9/5/02	1220		X	W	WRL-MW6B-0902	1									✓		Phenolics, NH_3-N
32866835	↓	↓		↓	↓	↓	1			HC								Ammonia-N
32866836							1	✓										Sulfate
32866837							1		✓									Total Cd, Cr, Fe, Pb, Mg, Mn, Se, Na, Tl, Zn
32866839	9/5/02	—		X	W	WRL-DUP-0902	1									✓		Phenolics, NH_3-N
32866840	↓	—		↓	↓	↓	1			HC								Ammonia-N
32866841		—					1	✓										Sulfate
32866842		—					1		✓									Total Cd, Cr, Fe, Pb, Mg, Mn, Se, Na, Tl, Zn

Containers Dispensed by: K. Hawkins	Date 9/4/02	Time 1200	Container(s) Received by:	Date	Time
Relinquished by: Robert S. Carey	Date 9/5/02	Time 1730	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Your signature authorizes ELS to analyze the sample(s) as indicated. Relinquished by:	Date	Time	Received at Lab by: K. Hawkins	Date 9/6/02	Time 920
Sampler Signature:					

White - LABORATORY Canary - ACCOMPANIES RESULTS Pink - CLIENT
Please return completed form and all sample containers to Environmental Laboratory Services.

4°C

Environmental LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park North Syracuse, NY 13212
(315) 458-8033 FAX (315) 458-0249 (800) 843-8265

CHAIN OF CUSTODY RECORD
and Authorization for Analysis

Name	Robert S. Casey	Title	Scientist
Company	EA ENGINEERING	Dept.	2152
Address	6731 Collamer Rd.	Job/PO No.	12040.69.0002
City, State, Zip	E. Syr., NY 13507		

The following services may result in additional charges: Express Service

☐ Telephone Results Telephone No. _____ Advance Agreement Required

☐ Fax Results Fax No. _____ ☐ 1 Week ☐ 48 Hour

To be completed by Sampler. Please remember to record this information on the container label.

ELS Number	*Date	*Time	*Comp.	*Grab	*Matrix	*Sampling Location	Number of Containers	Container Type/Preservative: Plastic/No Preservatives	Plastic/HNO_3	Plastic/H_2SO_4	Plastic/NaOH+Ascorbic Acid	Plastic/NaOH+Zinc Acetate	Glass/No Preservative	Glass/Sodium Thiosulfate	Amber Glass/No Pres.	Amber Glass/H_2SO_4	Other: (specify)	Analyses Required, Remarks, and/or Special Instructions
32812	9/5/02	1300		X	W	WRL-LI-0902	1								X			Phenolics & NH_3-N
32813	↓	↓		X	W	↓	1	1L										Sulfate
32814	↓	↓		X	W	↓	1		.5L									Total Cd, Cr, Fe, Pb, Mg, Mn
																		Si, Se, Na, Ti, Zn
32815	9/5/02	1240		X	W	WRL-SS-0902	1								X			Phenolics & NH_3-N
32816	↓	↓		X	W	↓	1		1L									Sulfate
32817	↓	↓		X	W	↓	1		.5L									Total Cd, Cr, Fe, Pb, Mg, Mn
																		Si, Se, Na, Ti, Zn
32818	9/5/02	1245		X	W	WRL-RB-0902	1								X			Phenolics & NH_3-N
32819	↓	↓		X	W	↓	1		1L									Sulfate
32820	↓	↓		X	W	↓	1		.5L									Total Cd, Cr, Fe, Pb, Mg, Mn
																		Si, Se, Na, Ti, Zn

Containers Dispensed by:	Date	Time	Container(s) Received by:	Date	Time
Relinquished by: Robert S. Casey	Date 9/5/02	Time 1730	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Your signature authorizes ELS to analyze the sample(s) as indicated. Relinquished by:	Date	Time	Received at Lab by: K. Hinkle	Date 9/6/02	Time 920
Sampler Signature:					

White - LABORATORY Canary - ACCOMPANIES RESULTS Pink - CLIENT

Please return completed form and all sample containers to Environmental Laboratory Services.

4°C

Environmental LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park North Syracuse, NY 13212
(315) 458-8033 FAX (315) 458-0249 (800) 843-8265

CHAIN OF CUSTODY RECORD and Authorization for Analysis

Name Robert S. Casey	Title Scientist
Company EA Engineering	Dept. 2152
Address 6731 Collamer Rd.	Job/PO No. 12040.69.0002
City, State, Zip E. Syr., NY 13057	

The following services may result in additional charges:

☐ Telephone Results Telephone No. _____ Express Service

☐ Fax Results Fax No. _____ Advance Agreement Required ☐ 1 Week ☐ 48 Hour

ELS Number	To be completed by Sampler. Please remember to record this information on the container label. *Date	*Time	*Comp.	*Grab	*Matrix	*Sampling Location	Number of Containers	Container Type/Preservative: Plastic/No Preservatives	Plastic/HNO_3	Plastic/H_2SO_4	Plastic/NaOH+Ascorbic Acid	Plastic/NaOH+Zinc Acetate	Glass/No Preservative	Glass/Sodium Thiosulfate	Amber Glass/No Pres.	Amber Glass/H_2SO_4	Other: (specify)	Analyses Required, Remarks, and/or Special Instructions
32871 25	9/5/02	1505		X	W	WRL-MW8B-0902	1									X		Phenolics & NH_3-N
32872 26	↓	↓		↓	↓	↓	1	1L										Sulfates
32873 27	↓	↓		↓	↓	↓	1		.5L									Total Cd, Cr, Fe, Pb, Mg, Mn, Si, Se, Na, Ti, Zn
32874 29	9/5/02	1520		X	W	WRL-MW7B-0902	1									X		Phenolics & NH_3-N
32875 30	↓	↓		↓	↓	↓	1	1L										Sulfates
32876 31	↓	↓		↓	↓	↓	1		.5L									Total Cd, Cr, Fe, Pb, Mg, Mn, Si, Se, Na, Ti, Zn
32877 33	9/5/02	1535		X	W	WRL-MW5B-0902	1									X		Phenolics & NH_3-N

Containers Dispensed by:	Date	Time	Container(s) Received by:	Date / Time
Relinquished by: Robert S. Casey	Date 9/5/02	Time 1730	Received by:	Date / Time
Relinquished by:	Date	Time	Received by:	Date / Time
Relinquished by:	Date	Time	Received by:	Date / Time
Your signature authorizes ELS to analyze the sample(s) as indicated. Relinquished by:	Date	Time	Received at Lab by: K Hawks	Date 9/6/02 Time 920
Sampler Signature:				

White - LABORATORY Canary - ACCOMPANIES RESULTS Pink - CLIENT

Please return completed form and all sample containers to Environmental Laboratory Services.

4°C

Environmental LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park North Syracuse, NY 13212
(315) 458-8033 FAX (315) 458-0249 (800) 843-8265

CHAIN OF CUSTODY RECORD
and Authorization for Analysis

Name	Robert S. Casey	Title	Scientist
Company	EA Engineering	Dept.	2152
Address	6731 Collamer Rd.	Job/PO No.	12810.69.01002
City, State, Zip	E. Syr., NY 13057		

The following services may result in additional charges: Express Service

☐ Telephone Results Telephone No. _____ Advance Agreement Required

☐ Fax Results Fax No. _____ ☐ 1 Week ☐ 48 Hour

ELS Number	To be completed by Sampler. Please remember to record this information on the container label. *Date	*Time	*Comp.	*Grab	*Matrix	*Sampling Location	Number of Containers	Container Type/Preservative: Plastic/No Preservatives	Plastic/HNO_3	Plastic/H_2SO_4	Plastic/NaOH+Ascorbic Acid	Plastic/NaOH+Zinc Acetate	Glass/No Preservative	Glass/Sodium Thiosulfate	Amber Glass/No Pres.	Amber Glass/H_2SO_4	Other: (specify)	Analyses Required, Remarks, and/or Special Instructions
32870 37	9/5/02	1545		X	W	WRL-MW3B-0902	1								X			Phenolics & NH_3-N
32820 38	↓	↓		X	W	↓	1	1L										Sulfates
32870 39	↓	↓		X	W	↓	1		5L									Total Cd, Cr, Fe, Pb, Mg, Mn, Si, Se, Na, Ti, Zn
32871 41	9/5/02	1600		X	W	WRL-MW2B-0902	1								X			Phenolics & NH_3-N
32872 42	↓	↓		↓	↓	↓	1	1L										Sulfates
32873 43	↓	↓		↓	↓	↓	1		5L									Total Cd, Cr, Fe, Pb, Mg, Mn, Si, Se, Na, Ti, Zn

Containers Dispensed by:	Date	Time	Container(s) Received by:	Date	Time
Relinquished by: Robert S. Casey	Date 9/5/02	Time 1730	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Your signature authorizes ELS to analyze the sample(s) as indicated. Relinquished by:	Date	Time	Received at Lab by: K. Hawks	Date 9/6/02	Time 920
Sampler Signature:					

White - LABORATORY Canary - ACCOMPANIES RESULTS Pink - CLIENT

Please return completed form and all sample containers to Environmental Laboratory Services.

Attachment D

Laboratory Analytical Results

Environmental
LABORATORY SERVICES

7280 Caswell Street, Hancock Air Park, North Syracuse, NY 13212
(315) 458-8033, FAX (315) 458-0249, (800) 842-4667

E.A. ENGINEERING, SCIENCE & TECHNOLOGY
737 Fly Road

East Syracuse, NY 13057
ATTN: Mr. Scott Graham

PROJECT #: 202171
RECEIVED: 09/06/2002

TEST PERFORMED	RESULTS	UNITS	DATE/TIME PERFORMED	METHOD NUMBER	PERFORMED BY
SAMPLE #: 328672 **CLIENT SAMPLE ID:** WRL-MWIB-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328673 **CLIENT SAMPLE ID:** WRL-MW6B-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328674 **CLIENT SAMPLE ID:** WRL-DUP-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328675 **CLIENT SAMPLE ID:** WRL-LI-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	0.41	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328676 **CLIENT SAMPLE ID:** WRL-SS-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328677 **CLIENT SAMPLE ID:** WRL-RB-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328678 **CLIENT SAMPLE ID:** WRL-MW8B-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	0.09	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328679 **CLIENT SAMPLE ID:** WRL-MW7B-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	0.16	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328680 **CLIENT SAMPLE ID:** WRL-MW5B-0902				**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA

E.A. ENGINEERING, SCIENCE & TECHNOLOGY
737 Fly Road

East Syracuse, NY 13057
ATTN: Mr. Scott Graham

PROJECT #: 202171
RECEIVED: 09/06/2002

TEST PERFORMED	RESULTS	UNITS	DATE/TIME PERFORMED	METHOD NUMBER	PERFORMED BY
SAMPLE #: 328680 **CLIENT SAMPLE ID:**	WRL-MW5B-0902			**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328681 **CLIENT SAMPLE ID:**	WRL-MW3B-0902			**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	<0.01	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328682 **CLIENT SAMPLE ID:**	WRL-MW2B-0902			**DATE SAMPLED:**	09/05/02
CHROMIUM, HEXAVALENT	0.40	MG/L	09/05/02 @ 11:10	SM18 3500-CR D	CSA
SAMPLE #: 328683 **CLIENT SAMPLE ID:**	WRL-MW1B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	0.009	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328684 **CLIENT SAMPLE ID:**	WRL-MW1B-0902			**DATE SAMPLED:**	09/05/02
SULFATE	206	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328685 **CLIENT SAMPLE ID:**	WRL-MW1B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	0.019	MG/L	09/13/02	EPA 6020	NSH
lead	0.008	MG/L	09/13/02	EPA 6020	NSH
manganese	0.844	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	0.237	MG/L	09/13/02	EPA 6020	NSH
ICP				EPA 6010	
iron	2.43	MG/L	09/13/02	EPA 6010	NSH
magnesium	68.8	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	18.8	MG/L	09/13/02	EPA 6010	NSH
sodium	127	MG/L	09/13/02	EPA 6010	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
SAMPLE #: 328686 **CLIENT SAMPLE ID:**	WRL-MW6B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA

E.A. ENGINEERING, SCIENCE & TECHNOLOGY
737 Fly Road

East Syracuse, NY 13057
ATTN: Mr. Scott Graham

PROJECT #: 202171
RECEIVED: 09/06/2002

TEST PERFORMED	RESULTS	UNITS	DATE/TIME PERFORMED	METHOD NUMBER	PERFORMED BY
SAMPLE #: 328687 **CLIENT SAMPLE ID:**	WRL-MW6B-0902			**DATE SAMPLED:**	09/05/02
SULFATE	213	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328688 **CLIENT SAMPLE ID:**	WRL-MW6B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	<0.005	MG/L	09/13/02	EPA 6020	NSH
lead	<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	0.128	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	0.268	MG/L	09/13/02	EPA 6010	NSH
magnesium	77.1	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	11.6	MG/L	09/13/02	EPA 6010	NSH
sodium	73.1	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328689 **CLIENT SAMPLE ID:**	WRL-DUP-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328690 **CLIENT SAMPLE ID:**	WRL-DUP-0902			**DATE SAMPLED:**	09/05/02
SULFATE	211	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328691 **CLIENT SAMPLE ID:**	WRL-DUP-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	0.007	MG/L	09/13/02	EPA 6020	NSH
lead	<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	0.128	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	0.466	MG/L	09/13/02	EPA 6010	NSH

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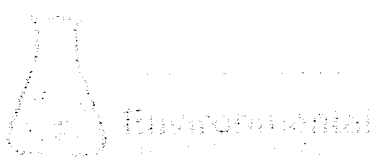
SAMPLE #: 328691 **CLIENT SAMPLE ID:**	WRL-DUP-0902			**DATE SAMPLED:**	09/05/02
ICP				EPA 6010	
magnesium	81.4	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	12.6	MG/L	09/13/02	EPA 6010	NSH
sodium	70.6	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328692 **CLIENT SAMPLE ID:**	WRL-LI-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	5.6	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	0.019	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328693 **CLIENT SAMPLE ID:**	WRL-LI-0902			**DATE SAMPLED:**	09/05/02
SULFATE	9.09	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328694 **CLIENT SAMPLE ID:**	WRL-LI-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	0.413	MG/L	09/13/02	EPA 6020	NSH
lead	<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	<0.005	MG/L	09/13/02	EPA 6020	NSH
selenium	0.018	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	<0.025	MG/L	09/13/02	EPA 6010	NSH
magnesium	<1.0	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	0.346	MG/L	09/13/02	EPA 6010	NSH
sodium	81.1	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328695 **CLIENT SAMPLE ID:**	WRL-SS-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328696 **CLIENT SAMPLE ID:**	WRL-SS-0902			**DATE SAMPLED:**	09/05/02
SULFATE	<2.0	MG/L	09/10/02	EPA 375.2	CSA



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SAMPLE #: 328697 **CLIENT SAMPLE ID:**	WRL-SS-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	<0.005	MG/L	09/13/02	EPA 6020	NSH
lead	<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	<0.005	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	<0.025	MG/L	09/13/02	EPA 6010	NSH
magnesium	<1.0	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	<0.107	MG/L	09/13/02	EPA 6010	NSH
sodium	<1.0	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328698 **CLIENT SAMPLE ID:**	WRL-RB-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/09/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328699 **CLIENT SAMPLE ID:**	WRL-RB-0902			**DATE SAMPLED:**	09/05/02
SULFATE	<2.0	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328700 **CLIENT SAMPLE ID:**	WRL-RB-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	<0.005	MG/L	09/13/02	EPA 6020	NSH
lead	<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	<0.005	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	<0.025	MG/L	09/13/02	EPA 6010	NSH
magnesium	<1.0	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	<0.107	MG/L	09/13/02	EPA 6010	NSH
sodium	<1.0	MG/L	09/13/02	EPA 6010	NSH

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TEST PERFORMED	RESULTS	UNITS	DATE/TIME PERFORMED	METHOD NUMBER	PERFORMED BY
SAMPLE #: 328701 **CLIENT SAMPLE ID:**	WRL-MW8B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/12/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328702 **CLIENT SAMPLE ID:**	WRL-MW8B-0902			**DATE SAMPLED:**	09/05/02
SULFATE	398	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328703 **CLIENT SAMPLE ID:**	WRL-MW8B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	0.007	MG/L	09/13/02	EPA 6020	NSH
chromium	0.132	MG/L	09/13/02	EPA 6020	NSH
lead	0.073	MG/L	09/13/02	EPA 6020	NSH
manganese	1.36	MG/L	09/13/02	EPA 6020	NSH
selenium	0.064	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	0.590	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	39.0	MG/L	09/13/02	EPA 6010	NSH
magnesium	108	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	52.8	MG/L	09/13/02	EPA 6010	NSH
sodium	185	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328704 **CLIENT SAMPLE ID:**	WRL-MW7B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/12/02	SM18 4500-NH3-E	CSA
PHENOLICS	0.003	MG/L	09/11/02	EPA 420.2	CSA
Low spike recovery due to sample matrix interference.					
SAMPLE #: 328705 **CLIENT SAMPLE ID:**	WRL-MW7B-0902			**DATE SAMPLED:**	09/05/02
SULFATE	33.5	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328706 **CLIENT SAMPLE ID:**	WRL-MW7B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	0.189	MG/L	09/13/02	EPA 6020	NSH
lead	0.010	MG/L	09/13/02	EPA 6020	NSH

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SAMPLE #: 328706 **CLIENT SAMPLE ID:**	WRL-MW7B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
manganese	0.488	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	0.066	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	22.9	MG/L	09/13/02	EPA 6010	NSH
magnesium	21.7	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)	42.1	MG/L	09/13/02	EPA 6010	NSH
sodium	69.0	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328707 **CLIENT SAMPLE ID:**	WRL-MW5B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.4	MG/L	09/12/02	SM18 4500-NH3-E	CSA
Elevated detection level due to reduced received sample volume.					
PHENOLICS	0.003	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328708 **CLIENT SAMPLE ID:**	WRL-MW3B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN	<1.0	MG/L	09/12/02	SM18 4500-NH3-E	CSA
PHENOLICS	<0.002	MG/L	09/11/02	EPA 420.2	CSA
Low spike recovery due to sample matrix interference.					
SAMPLE #: 328709 **CLIENT SAMPLE ID:**	WRL-MW3B-0902			**DATE SAMPLED:**	09/05/02
SULFATE	44.9	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328710 **CLIENT SAMPLE ID:**	WRL-MW3B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS				EPA 6020	
cadmium	<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium	0.006	MG/L	09/13/02	EPA 6020	NSH
lead	0.005	MG/L	09/13/02	EPA 6020	NSH
manganese	0.056	MG/L	09/13/02	EPA 6020	NSH
selenium	<0.005	MG/L	09/13/02	EPA 6020	NSH
thallium	<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc	0.041	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion			09/11/02	EPA 3005A	BDR
ICP				EPA 6010	
iron	2.87	MG/L	09/13/02	EPA 6010	NSH

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SAMPLE #: 328710	**CLIENT SAMPLE ID:**	WRL-MW3B-0902			**DATE SAMPLED:**	09/05/02
ICP					EPA 6010	
magnesium		9.50	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)		16.6	MG/L	09/13/02	EPA 6010	NSH
sodium		70.3	MG/L	09/13/02	EPA 6010	NSH
SAMPLE #: 328711	**CLIENT SAMPLE ID:**	WRL-MW2B-0902			**DATE SAMPLED:**	09/05/02
AMMONIA NITROGEN		2.5	MG/L	09/12/02	SM18 4500-NH3-E	CSA
PHENOLICS		0.010	MG/L	09/11/02	EPA 420.2	CSA
SAMPLE #: 328712	**CLIENT SAMPLE ID:**	WRL-MW2B-0902			**DATE SAMPLED:**	09/05/02
SULFATE		14.3	MG/L	09/10/02	EPA 375.2	CSA
SAMPLE #: 328713	**CLIENT SAMPLE ID:**	WRL-MW2B-0902			**DATE SAMPLED:**	09/05/02
ICP/MS					EPA 6020	
cadmium		<0.005	MG/L	09/13/02	EPA 6020	NSH
chromium		0.385	MG/L	09/13/02	EPA 6020	NSH
lead		<0.005	MG/L	09/13/02	EPA 6020	NSH
manganese		0.007	MG/L	09/13/02	EPA 6020	NSH
selenium		0.007	MG/L	09/13/02	EPA 6020	NSH
thallium		<0.005	MG/L	09/13/02	EPA 6020	NSH
zinc		<0.005	MG/L	09/13/02	EPA 6020	NSH
Metals Digestion				09/11/02	EPA 3005A	BDR
ICP					EPA 6010	
iron		0.213	MG/L	09/13/02	EPA 6010	NSH
magnesium		<1.0	MG/L	09/13/02	EPA 6010	NSH
silica (sio2)		1.7	MG/L	09/13/02	EPA 6010	NSH
sodium		55.2	MG/L	09/13/02	EPA 6010	NSH

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Wendy J. Umberger
Laboratory Director

09/19/2002
Print Date

All tests performed under NYS ELAP Laboratory Certification # 11375 unless otherwise stated.

Attachment E

Landfill Cap Inspection Checklist

LANDFILL CAP INSPECTION CHECKLIST
WITMER ROAD LANDFILL, NIAGARA FALLS, NEW YORK

EA Personnel:	Robert Casey
Date:	6 September 2002
Weather:	Clear, mid 70s

1. Inspection of ground surface for exposure of geotextile cover (cap erosion):
   NO DEFICIENCIES OBSERVED

2. Inspection of ground surface for differential settlement resulting in soil cracking or ponded water:
   NO DEFICIENCIES OBSERVED

3. Identification of stressed vegetation:
   VEGETATION ON LANDFILL (GRASS), ~1 FT HIGH

4. Identification of seeps, rooted vegetation (trees), and/or animal burrows:
   NONE OBSERVED

5. Identification of deteriorating equipment (i.e., monitoring wells, fencing, or drainage structures):
   NONE OBSERVED

6. Inspection of stormwater drainage swales for erosion, sloughing, or flow-through:
   NO DEFICIENCIES OBSERVED

7. Inspection of east side of the landfill (Niagara Mohawk Power Corporation parcel) along the intermittent stream for the presence of erosion or sloughing:
   NO DEFICIENCIES OBSERVED

8. Inspection of access roads:
   NO DEFICIENCIES OBSERVED. EAST AND NORTH ACCESS ROADS HAVE VEGETATION COMING THROUGH.